REMARKS

By this Amendment, claims 1, 12, and 13 are amended merely to clarify the recited subject matter, and claim 11 is canceled without prejudice or disclaimer. Claims 2, 6, 7, 15, and 16 were canceled previously. Claims 1, 3-5, 8-10, 12-14, 17, and 18 are pending. Claims 1 and 13 are independent.

The Office Action rejected claims 1, 3-5, 11, 13, and 14 under 35 U.S.C. § 103(a) as being unpatentable over Antonio et al. (U.S. Patent No. 5,621,752; hereafter "Antonio") in view of Popovic et al. (U.S. Patent No. 6,370,397; hereafter "Popovic"); claims 8, 9, 12, 17, and 18 under 35 U.S.C. § 103(a) as being unpatentable over Antonio in view of Popovic and El-Tarhuni et al. (U.S. Patent No. 6,201,828; hereafter "El-Tarhuni"); and claim 10 under 35 U.S.C. § 103(a) as being unpatentable over Antonio in view of Popovic and Lomp et al. (U.S. Patent No. 6,272,168; hereafter "Lomp"). Claim 11 has been canceled, rendering the rejection moot with respect to that claim. Applicants traverse the remaining rejections because the cited prior art references, analyzed individually or in combination, fail to teach or suggest the combination of features recited by the amended claims.

For example, the cited prior art fails to teach or suggest the claimed receiver including "at least one rake branch, ... wherein, the plurality of correlators included in the at least one rake branch are adapted to calculate, for only one branch of the received signal, a correlation from a calculated incoming direction and from left and right sides of that incoming direction of that at least one rake branch," and "wherein the calculation means are adapted to calculate a control signal for controlling the beam formers such that, if the correlation result calculated, for the only one branch of the received signal, from the left or right side of the incoming direction is higher than the correlation result obtained from the calculated incoming direction for the only one branch of the received signal, the first beam former is controlled to receive the signal from the left or right side of the incoming direction having the higher correlation result," as recited by independent claim 1 and its dependent claims.

Similarly, the cited prior art fails to teach or suggest the claimed method "wherein said correlating includes calculating, for only one branch of the received signal, a correlation from a calculated incoming direction and from left and right sides of that incoming direction of each rake branch," further comprising "monitoring, for the only one branch of the received

signal, the incoming direction and delay variation of the signal component on the basis of the output signals of the correlators," and "wherein the beam formers are at least in part controlled by calculating, inside each rake branch, a control signal for controlling the beam formers such that, if the correlation result calculated, for the only one branch of the received signal, from the left or right side of the incoming direction is higher than the correlation result obtained from the calculated incoming direction for the only one branch of the received signal, a first beam former is controlled to receive the signal from the left or right side of the incoming direction having the higher correlation result," as recited by independent claim 13 and its dependent claims.

Antonio merely discloses a spread spectrum communication system in which signals received with several antenna beams (e.g., 3) are routed to a rake branch. The signal received with the middle beam is used for reception. The correlations of the signals received with the left and right beams are also measured. If one of these signals gives a better correlation result than the middle beam, reception is switched to the respective beam. In contrast to Antonio, the claimed invention recites that only one of the branches (I or Q) is used to calculate correlation results for, and/or monitor, the incoming direction and delay of the received signal. (See Applicant's specification at page 11, lines 14-17; Fig. 4a.)

Applicants reiterate that Antonio discloses use of beam forming circuitry 224 that is separate from rake branches, as shown in Figs. 5A to 5D. In particular, control and adjustment of beams occur outside of the rake branches. To the contrary, in the receiver of the claimed invention, the beam forming circuits are integrated in the rake branches, as seen in Figure 3 of the present application. There is no separate beam forming circuit, and control and adjustment of beams occurs separately inside each rake branch.

Section 2 on page 2 of the Office Action broadly defined a rake branch to be the combination of a beam former and a correlation receiver. However, as understood in the art, the terms "rake finger" and "rake branch" are synonymous. Therefore, when Antonio refers to the correlation receivers as "fingers" that are separate from beam formers (col. 9, line 56 through col. 10, line 14), Antonio teaches that the rake branches and beam formers are separate. Thus, Antonio does not support the broad definition set forth in the Office Action.

Popovic, El-Tarhuni, and Lomp fail to remedy the deficiencies of Antonio. Popovic merely discloses a search window delay tracking procedure for use in a multipath search processor of a CDMA radio receiver. El-Tarhuni merely discloses systems and methods for

generating despreading codes with refined estimates of transmission delays in CDMA systems. Lomp merely discloses use of an adaptive vector correlator (AVC) to estimate the channel impulse response and to obtain a reference value for coherent combining of received multipath signal components.

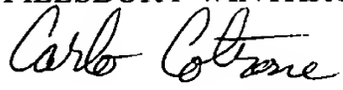
Therefore, the teachings of Antonio, Popovic, El-Tarhuni, and Lomp, analyzed individually or in combination, fail to teach or suggest the combination of features recited by the rejected claims. Accordingly, claims 1, 3-5, 8-10, 12-14, 17 and 18 are allowable.

All objections and rejections having been addressed, Applicants request issuance of a notice of allowance indicating the allowability of all pending claims. If anything further is necessary to place the application in condition for allowance, Applicants request that the Examiner contact Applicants' undersigned representative at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

PILLSBURY WINTHROP LLP



CARLO M. COTRONE
Reg. No. 48,715
Tel. No. (703) 905-2041
Fax No. (703) 905-2500

Date: September 3, 2004
P.O. Box 10500
McLean, VA 22102
(703) 905-2000